

What is claimed is:

1. An elevator communication system for providing communication between a plurality of hall fixture devices and at least one elevator system controller, the
5 elevator communication system comprising:
 - (a) at least one elevator door interlock wiring circuit; and
 - (b) a transceiver device coupled to the at least one door interlock wiring circuit for transmitting and receiving signals between the at least one elevator system controller and the plurality of hall fixture devices over the at least one interlock
10 wiring circuit.
2. The system according to claim 1, wherein the plurality of hall fixture devices each further comprise a signaling device for coupling the signals between each of the plurality of hall fixture devices and the transceiver device over the at least
15 one door interlock wiring circuit.
3. The elevator communication system of claim 2, wherein the signaling device comprises:
 - (a) an interface transceiver device for generating and receiving the signals;
20 and
 - (b) at least one coupling device placed in close proximity with the elevator door interlock wiring circuit for coupling the transmitted and received signals between the elevator door interlock wiring circuit and the interface transceiver.
- 25 4. The elevator communication system of claim 3, wherein the at least one coupling device is an induction device for inductively coupling the transmitted and received signals between the elevator door interlock wiring circuit and the interface transceiver.

5. The elevator communication system of claim 3, wherein the at least one coupling device is a capacitive device for capacitively coupling the transmitted and received signals between the elevator door interlock wiring circuit and the interface transceiver.

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6. The elevator communication system of claim 3, wherein the interface transceiver comprises a transmitter for transmitting request data signals received from one of the plurality of hall fixture devices onto the door interlock wiring circuit.

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7. The elevator communication system of claim 6, wherein the transmitted request data signals by the interface transceiver comprise an rf signal modulated with the request data signals.

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8. The elevator communication system of claim 3, wherein the interface transceiver includes a receiver for receiving control signals over the interlock wiring circuit from the elevator system controller and transceiver device.

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9. The elevator communication system of claim 8, wherein the interface transceiver comprises a demodulation circuit for demodulating the received control signals and sending the demodulated control signals to one of the plurality of hall fixtures.

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10. The elevator communication system of claim 9, wherein the demodulated control signals comprise control data signals generated by the elevator system controller.

11. An elevator communication system for providing communication between a plurality of hall fixture devices and at least one elevator system controller, the elevator communication system comprising:

(a) at least one elevator door interlock wiring circuit having a first and a second portion;

(b) a first transceiver device coupled to the first portion of the door interlock wiring for transmitting and receiving signals between the at least one elevator system controller and the plurality of hall fixture devices over the interlock wiring; and

(c) a second transceiver device coupled to the second portion of the door interlock wiring for transmitting and receiving the signals between the at least one elevator system controller and the plurality of hall fixture devices over the interlock wiring.

12. The system according to claim 11, wherein the plurality of hall fixture devices each further comprise a signaling device for coupling the signals between each of the plurality of hall fixture devices and the first and second transceiver device over the door interlock wiring circuit.

13. The elevator communication system of claim 12, wherein the signaling device comprises:

(a) an interface transceiver device for generating and receiving the signals; and

(b) at least one coupling device placed in close proximity with the elevator door interlock wiring circuit for coupling the generated and received signals between the elevator door interlock wiring circuit and the interface transceiver.

14. The elevator communication system of claim 13, wherein the at least one coupling device is an induction device for inductively coupling the generated and

received signals between the elevator door interlock wiring circuit and the interface transceiver.

15. The elevator communication system of claim 13, wherein the at least one

5 coupling device is a capacitive device for capacitively coupling the generated and received signals between the elevator door interlock wiring circuit and the interface transceiver.

16. The elevator communication system of claim 13, wherein the interface

10 transceiver comprises a transmitter for transmitting request data signals received from one of the plurality of hall fixture devices onto the door interlock wiring circuit.

17. The elevator communication system of claim 13, wherein the interface

15 transceiver includes a receiver for receiving the signals transmitted from the first and second transceiver over the door interlock circuit to one of the plurality of hall fixtures.

18. The elevator communication system of claim 16, wherein the transmitted

20 request data signals by the interface transceiver comprises an rf signal modulated with the request data signals.

19. The elevator communication system of claim 17, wherein the received

signals transmitted from the first and second transceiver comprises an rf signal modulated with control data signals.

25 20. The elevator communication system of claim 11, wherein the at least one

elevator door interlock wiring circuit comprises at least two elevator interlock

wiring circuits, wherein the at least two elevator interlock wiring circuits are connected to each other on each landing.

21. An elevator door interlock wiring circuit comprising:

- 5 (a) a plurality of series connected conductors forming the door interlock circuit of the elevator; and
- (b) a plurality of signaling devices each of which are located in close proximity to each of the plurality of series connected conductors,
wherein each of the plurality of signaling devices couple signals between at least
10 one of a plurality of hall fixtures and each of the plurality of series connected
conductors.

22. The elevator door interlock circuit of claim 21, wherein each of the plurality of signaling devices comprises:

- 15 (a) a coupling device for coupling the signals onto one of the plurality of series connected conductors, and coupling the signals from one of the plurality of series connected conductors; and
- (b) an interface transceiver device for transmitting the signals received from one the plurality of hall fixtures to the coupling device, and transmitting the signals received from the coupling device to one of the plurality of hall fixtures.
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- 25 23. The elevator door interlock circuit of claim 21, wherein the coupling device is an induction device for inductively coupling the signals onto one of the plurality of series connected conductors and inductively coupling the signals from one of the plurality of series connected conductors.

24. The elevator door interlock circuit of claim 21, wherein the coupling device is a capacitive device for capacitively coupling the signals onto one of the plurality

of series connected conductors and capacitively coupling the signals from one of the plurality of series connected conductors.

25. The elevator door interlock circuit of claim 21, wherein the signals are control

5 signals sent between an elevator system controller and the plurality of fixture devices.

26. The elevator door interlock circuit of claim 22, wherein each of the plurality

of interface devices further comprises a power supply for providing power to the

10 interface transceiver device and one of the plurality of hall fixtures.

27. The elevator door interlock circuit of claim 26, wherein the power supply

comprises a capacitive charging device that is charged by coupled power from

one of the plurality of series connected conductors, and wherein the coupled

15 power is stored by the capacitive charging device for providing power to the transceiver device and one of the plurality of hall fixtures.

28. The elevator door interlock circuit of claim 26, wherein the power supply

further comprises a coupling transformer for inductively coupling power from one

20 of the plurality of series connected conductors to the capacitive charging device.

29. A method of signal communications in an elevator system, the method

comprising:

(a) coupling at least one request signal generated by at least one hall fixture

25 onto at least one elevator door interlock wiring circuit;

(b) receiving the at least one request signal from the at least one interlock

wiring circuit and generating at least one control signal for responding to a

request associated with the at least one request signal; and

(c) coupling the at least one control signal from the at least one interlock wiring to the at least one hall fixture from which the at least one request signal originated.

5 30. The method according to claim 29, further comprising the step of (d) executing the request associated with the at least one request signal.

10 31. The method according to claim 29, wherein the at least one request signal coupled onto the at least one door interlock wiring circuit is modulated onto an rf signal.

32. The method according to claim 29, wherein the at least one control signal coupled onto the at least one door interlock wiring circuit is modulated onto an rf signal.

15 33. The method according to claim 29, wherein the at least one hall fixture is a hall call button.

20 34. The method according to claim 29, wherein the at least one hall fixture is a hall call button.

35. The method according to claim 29, wherein the at least one request signal is a hall call request.

25 36. The method according to claim 29, wherein the at least one control signal activates a hall call acknowledgement lamp.

37. The method according to claim 29, wherein the at least one control signal activates a sound gong.

38. The method according to claim 29, wherein the at least one control signal turns off a hall acknowledgement lamp.
- 5 39. The method according to claim 29, wherein the at least one control signal activates an elevator position indicator located in an elevator landing.
- 10 40. An elevator power supply system for providing electrical power to hall fixture devices by accessing an interlock wiring signal flowing in an elevator door interlock wiring circuit, the power supply system comprising:
 - (a) a transformer device located at a proximity to the elevator door interlock wiring circuit for inductively receiving the interlock wiring electrical signal and generating a power supply signal; and
 - (b) a power supply unit for receiving the power supply signal and generating a DC signal, wherein the DC signal is stored in the power supply as stored electrical charge for providing power to electrical circuitry associated with the hall fixture devices.
- 15 41. The elevator power supply system according to claim 40, further comprising a power source for providing alternative electrical power to the electrical circuitry.
- 20 42. The elevator power supply system according to claim 41, wherein the power source comprises a solar energy conversion device for converting ambient light into electrical charge, and wherein the electrical charge provides electrical power to the electrical circuitry.
- 25 43. The elevator power supply system according to claim 41, wherein the power source comprises a mechanical-to-electrical conversion device for converting

motion associated with an elevator door into electrical charge, and wherein the electrical charge provides electrical power to the electrical circuitry.

44. The elevator power supply system according to claim 41, wherein the
5 electrical circuitry comprises an elevator hall call circuit and at least one push button switch.

45. The elevator power supply system according to claim 41, wherein the electrical circuitry comprises a transceiver device.

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46. The elevator power supply system according to claim 40, wherein the interlock wiring electrical signal comprises a 120V AC signal.